

The Recent Evolution of North Carolina's Economy

Patrick Conway
Bowman and Gordon Gray Professor of Economics
University of North Carolina at Chapel Hill

Thank you to the commissioners for inviting my participation in this hearing “China’s Impact on the North Carolina Economy: Winners and Losers”.

The evolution of the North Carolina economy has been of interest to me throughout my professional career. As you know, North Carolina has traditionally been the premier state in the United States for the production of textiles; one of my continuing research interests has been in the evolution of that industry in North Carolina over the past 50 years. This has led me to conduct interviews with textiles executives as well as to analyze production and trade data for the state and the nation. I will be happy to discuss the findings of this research with you.

Mr. Magnusson has asked me to provide a broad overview of economic developments in North Carolina. To do so, I will begin by touching on the most important themes in North Carolina’s economic evolution. The Commission’s charge will lead it to focus upon the subset of these themes that have to do with US-China trade, and I will elaborate on those. Finally, while it is not within the purview of my remarks, I invite questions from the Commissioners on the controversial issues addressed in the consultant’s briefing paper for this meeting. While his collection of facts is correct, I disagree with the conclusions he draws.

North Carolina within the US

North Carolina in 2006 had 8.8 million residents, roughly three percent of the US population.¹ Its population grew over 10 percent from the beginning of the century, well in excess of the 6.8 percent for the US as a whole. The in-migration could be attributed in part to migrants from other US states and in part to immigrants from Mexico and Central America.²

Per capita income in North Carolina remains below the nation’s average; in 2006 it ranked 36th among states.³ Figure 1 illustrates this point in a different way: North Carolina’s production has historically been a smaller share of US GDP than its population has been of the US population. NC production in 1977 represented 2.25

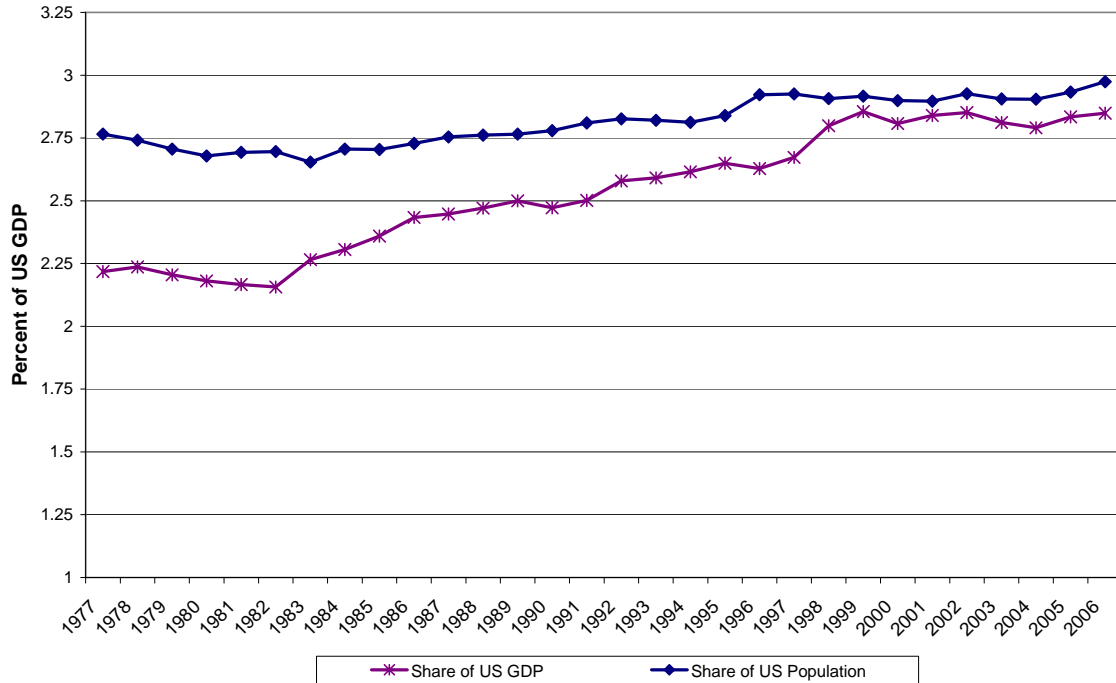
¹ Data in this paragraph from US Bureau of the Census, 2007.

² The Population Division of the US Census Bureau estimates that the population of North Carolina grew by 810,000 in that period. Of that, 36 percent was from natural increase (births exceeding deaths), 22 percent was from international in-migration and 42 percent was from in-migration from other states.

³ Data in this paragraph are drawn from Bureau of Economic Analysis, US Department of Commerce.

percent of the total production of the US. It lost ground relative to the rest of the US until 1982. From 1982 to 1999, the North Carolina economy grew quite rapidly relative to the US – by 1999, the NC production share was almost equal to its population share. Since 1999, the production share has remained stagnant. Figure 1 also illustrates that North Carolina's more-rapid growth in population is not unique to the current period – it was a feature of the 1982-1996 period as well.

Figure 1: North Carolina's Share in US Population and GDP



The population of North Carolina is also growing more educated, though the state still ranks in the bottom third of the US in terms of educational attainment. In 1970, the state ranked 48 out of the 50 states in the percent of population having completed a high school degree. In 1980, 1990 and 2000 the ranks were 47, 42 and 39 respectively.⁴

Sectoral evolution

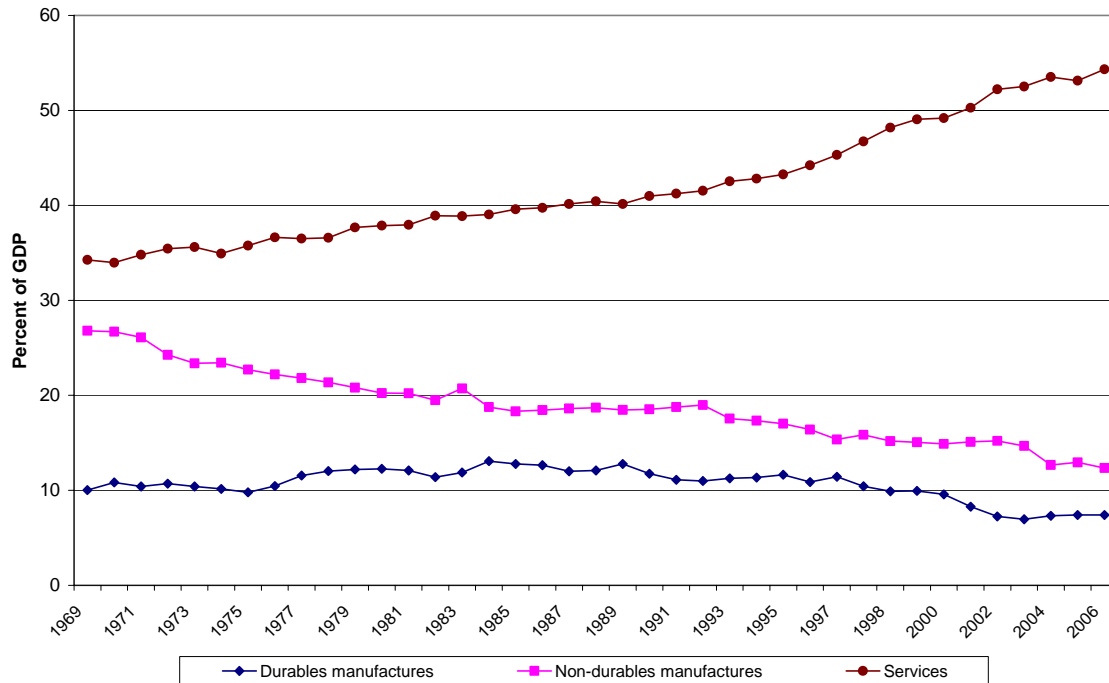
North Carolina is following with some deviations the same path that the US economy is following in terms of sectoral development: agriculture and manufactures represent a smaller and smaller part of production over time, while services represent a steadily growing portion of production. Figure 2 illustrates the evolution of production since 1969 in three aggregate categories: services, durables manufactures and non-durables manufactures.⁵ This pattern is quite similar to that of the US as a whole: the value of

⁴ US Bureau of the Census, decennial results.

⁵ Bureau of Economic Analysis, US Department of Commerce. "Durables" manufactures include furniture, primary metals manufacturing, fabricated metals manufacturing, computers, electrical equipment, motor vehicles and appliances. "Non-durables" manufactures include paper manufactures, textiles, apparel,

services production rose while the value of manufacturing production declined as a share of total production. Within manufacturing, there has been steady erosion in the share of non-durables production.

Figure 2: North Carolina production



This tendency toward services and away from manufacturing production is observed in magnified form in employment.⁶ Of total private employment in the US in 1969, 16 percent was in durables manufacture and 12 percent was in non-durables manufacture.⁷ In North Carolina, manufacturing was heavily skewed toward the production of non-durables: the comparable shares were nine percent in durables manufacture and 21 percent in non-durables manufacture. By 2001, employment in durables and non-durables manufactures in the US were nine and five percent, respectively, of private employment. In North Carolina, the percentages were equal at eight percent in 2001 – and declined to six percent by 2005.

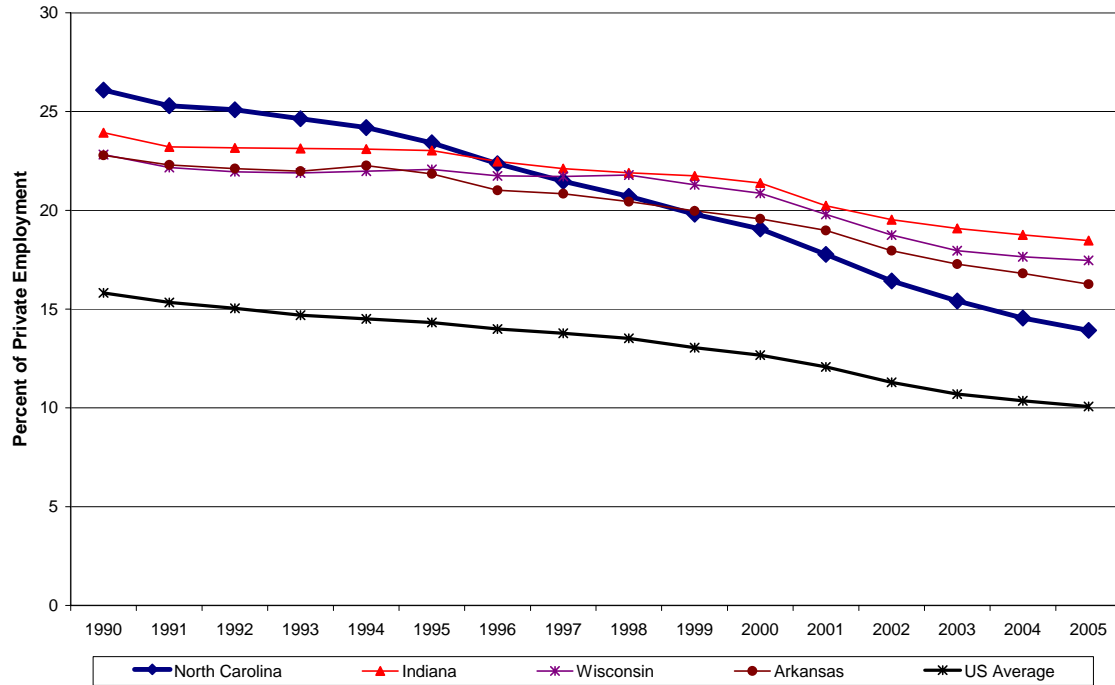
chemical products, plastics, printing and food products. Excluded categories include construction, mining and agriculture.

⁶ The tendency is more pronounced in employment because of what is known as the “Baumol effect”. Given that productivity growth is more rapid in manufacturing than in services, if demand for services and manufactures grow at equal rates the demand for manufacturing workers will grow more slowly than for service workers. Baumol, W. and W. Bowen: *Performing Arts: the Economic Dilemma*. New York: Twentieth Century Fund, 1966.

⁷ Data in this paragraph are drawn from Bureau of Labor Statistics, US Department of Labor.

When manufacturing employment is considered as a whole, North Carolina's experience stands out among the states. It was the state with employment most heavily concentrated in manufactures until the early 1990s. It remains above average today, but has shed manufacturing jobs at a faster rate than in other US states. Figure 3 illustrates this dynamic.

Figure 3: Employment in Manufacturing for the US and in Various States



The bottom line in Figure 3 is the average share of employment in manufacturing for the US as a whole. It illustrates the “Baumol effect”: more-rapid productivity growth in manufactures has led to a falling share of employment in manufactures over all.⁸ The top four lines represent the percent of private employment in manufacturing in the four highest-ranked states in 1990: North Carolina, Indiana, Wisconsin and Arkansas. As is evident, North Carolina was most highly specialized in manufacturing employment at the beginning of the period. While the shares declined for all states, the other three followed the pattern of the US as a whole. North Carolina, by contrast, reduced its share in manufacturing much more rapidly than the others.

There are two reasons for this more-rapid decline in North Carolina. First, the state has seen a boom in construction and services employment over this period. Financial services have seen robust growth. Among other services, both tourism and health services have increased sharply. Table 1 below illustrates the employment growth rates for the period 1990 to 2001. (Health and tourism figure in the “other services” category.)

⁸ The data illustrated here are drawn from Bureau of Economic Analysis, US Department of Commerce.

Table 1: NC Employment Growth, 1990-2001

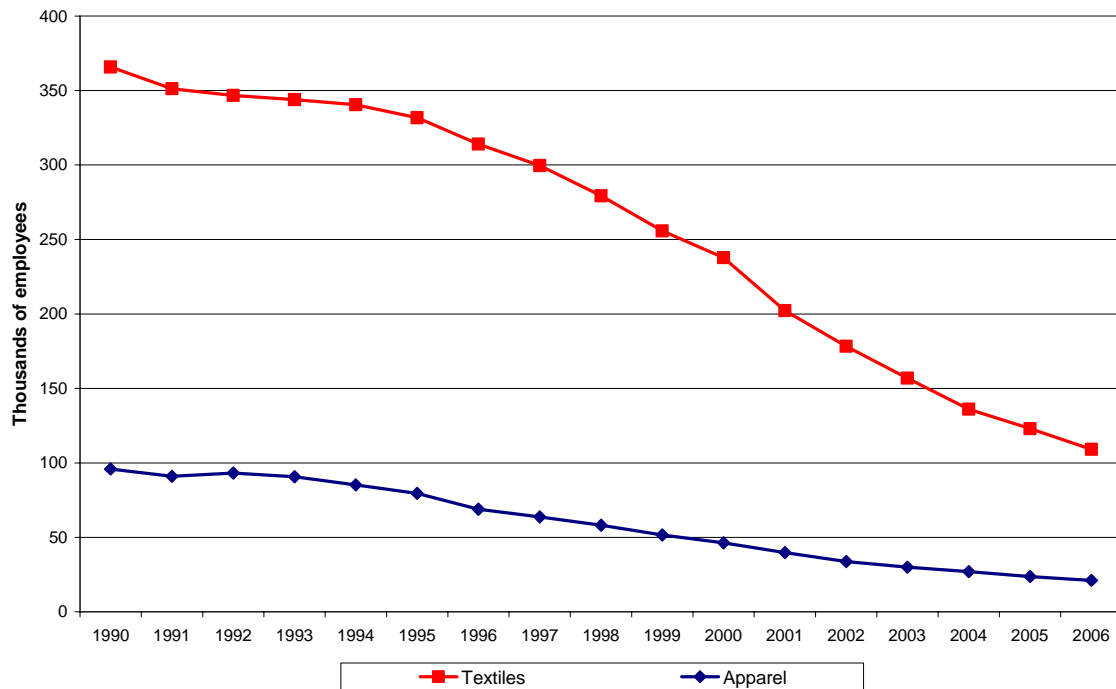
Durables manufactures	3.6
Non-durables manufactures	-27.0

Construction	38.6
Transportation	25.7
Wholesale	15.3
Retail trade	25.1
Financial services	44.0
Other services	61.1
Government	21.8

Source: Bureau of Economic Analysis, US Department of Commerce

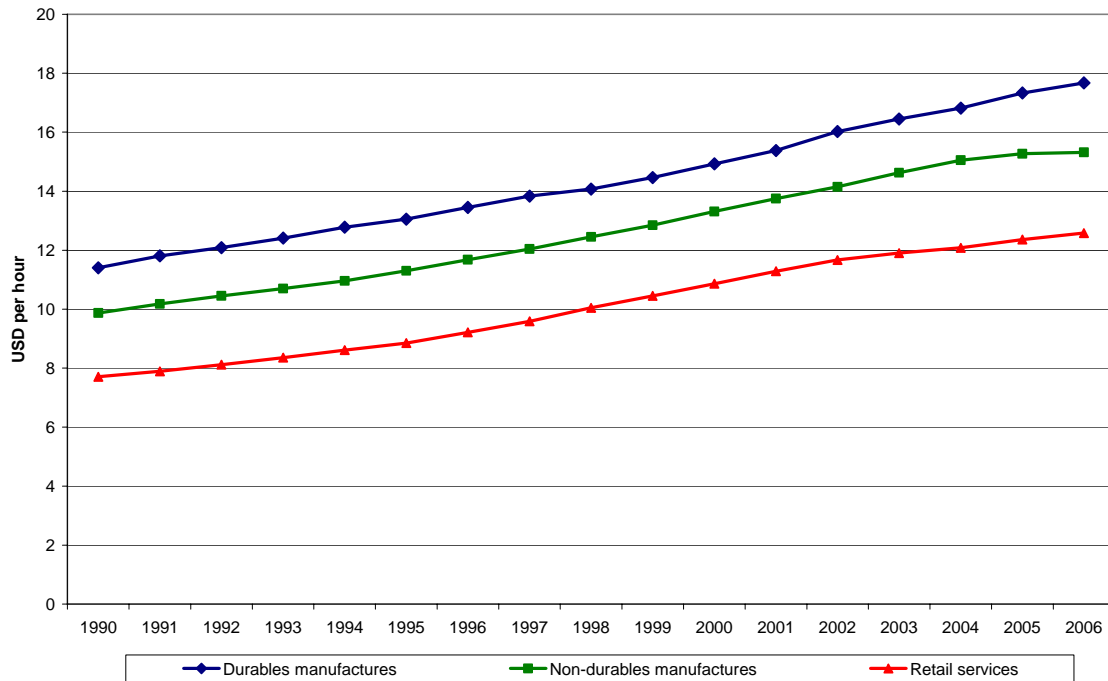
Second, the state has traditionally relied upon employment in non-durables production, especially textiles and apparel. As production in these sectors has declined nationwide, the impact is felt disproportionately in North Carolina. Textiles and apparel figure prominently in production of non-durables manufactures. Figure 4 illustrates the decline in textiles and apparel employment in recent years in North Carolina.

Figure 4: North Carolina Employment in Textiles and Apparel



This reallocation of employment from manufacturing to services has real implications for hourly earnings of workers, since the average services job pays significantly less than the average non-durables manufacturing job. Figure 5 illustrates the difference in payments by aggregate category for the US as a whole.⁹

Figure 5: Average Hourly Earnings (entire US)



The average hourly earnings for durables and non-durables manufactures are contrasted here with hourly earnings in retail services. As jobs are shed in durables and non-durables and workers shift to services, there will be a corresponding drop in average hourly earnings.

Foreign in-migration, especially Mexican immigration, has been more rapid in North Carolina than the average for the US as a whole. North Carolina in 2000 was the 8th largest state in terms of immigrants from Mexico with 179 thousand. Estimates for 2006 were that documented and undocumented immigrants represented 500,000 residents in North Carolina.¹⁰

The role of international trade in this evolution

The preceding section was descriptive in nature. In this section I examine the contribution of international trade to this evolution. This requires careful analysis; I will not present the analysis here, but will provide references to the research papers. My examples will be drawn from the textiles and apparel sectors.

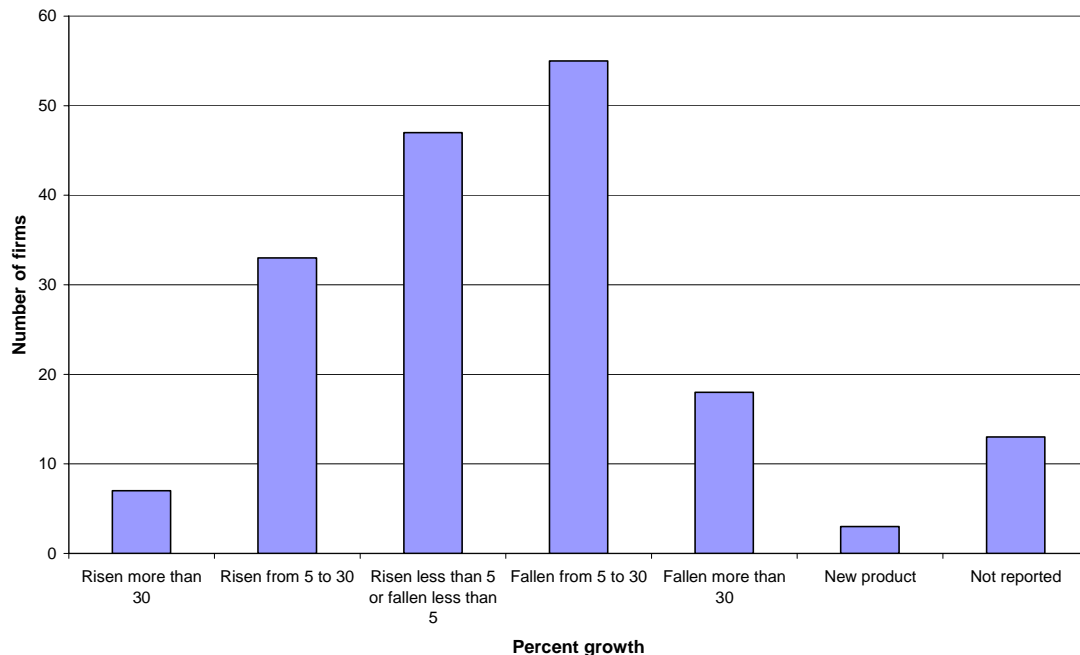
⁹ Data drawn from Bureau of Labor Statistics, US Department of Labor.

¹⁰ Raleigh News and Observer, 2 September 2007.

It is important to begin by noting that international trade expands opportunities to consumers. US consumers of textiles and apparel used to turn to US producers for these goods. The opportunity to purchase internationally was beneficial for those consumers, as similar goods were available at a lower price from foreign producers.

US producers faced increased competition from foreign sources. While the US government created a set of protective quotas in the Multi-Fiber Agreement (later reconstituted as the Agreement on Clothing and Textiles), the pressure from international competition was a constant for US producers. In a 2004 survey I conducted of 273 textiles manufacturers in the US, this was evidence in the downward pressure on product prices.¹¹ During that same period, average non-agricultural wages rose by 25 percent.¹²

Figure 6: Cumulative Growth in Price of Major Product since 1997



Source: Conway and Connolly (2004)

This wage-price scissors depressed, and in many cases eliminated, profits at the firm level. Producers in many instances chose to shut down, or sell off the plant, rather than continue.¹³ The Multi-Fiber Agreement limited the growth of imports from a small number of competitive foreign countries (including China), but imports from many developing countries undercut US prices. Figure 7 illustrates the varying cost of imported products in the quota categories of knit cotton shirts. (Note that China, fifth

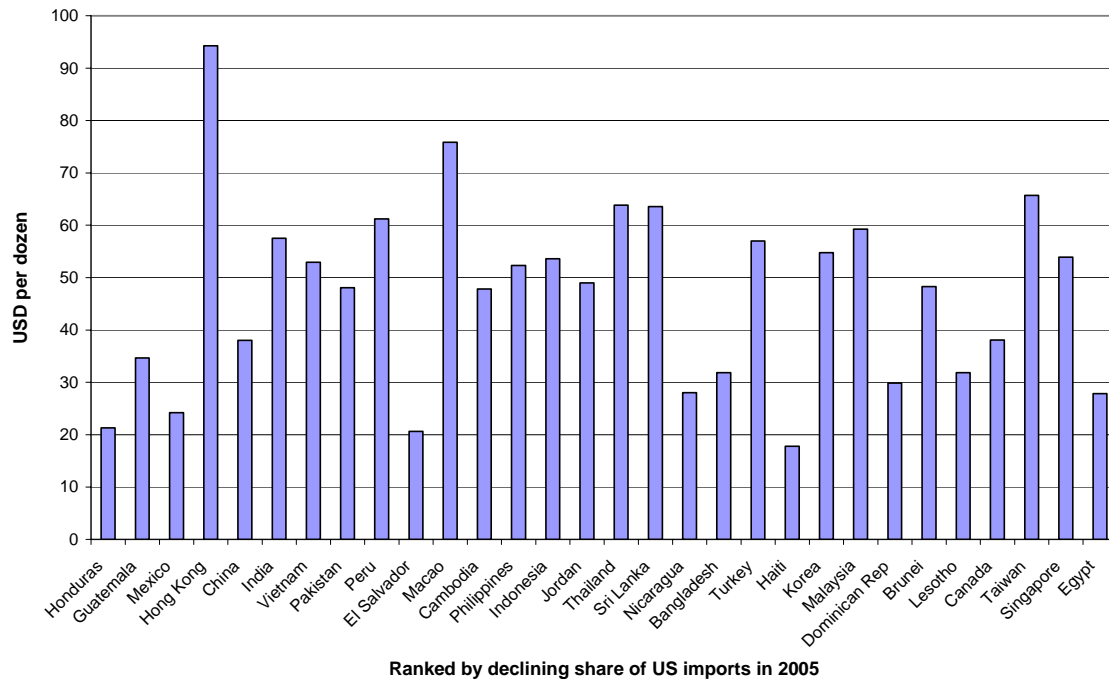
¹¹ Conway, P. and Connolly, R.: "Performance and Perception: Results from a Survey of US Textiles Manufacturers", processed, 2004.

¹² Economic Report of the President 2006, Table B47. Average hourly earnings in private non-agricultural employment.

¹³ Conway, P.: "Layoffs, Downsizing and Plant Closure: Labor-Demand Dynamics in an Import-competing Industry", processed, 2007.

from the left, is by no means the least expensive landed source of shirts.) These represent only the largest-volume exporters to the US; there are over 100 exporters in total in these quota categories alone. Only eleven of these countries were under quota restriction in 2004.¹⁴ To provide a comparison, the average 2005 USD price of a dozen knit cotton shirts exported from the US was \$32.70.¹⁵

Figure 7: Unit (landed) value in 2005 -- knit cotton shirts



Source: Conway, P.: "Global Implications for Unraveling Textiles and Apparel Quotas", processed, 2006.

While the state ranks quite high in terms of manufacturing employment, it is only 14th in exports of manufactures.¹⁶ It seems just as likely an agricultural exporter as a manufactures exporter.

It is important to note that international trade has provided opportunities for US producers as well. Many of North Carolina's most successful textiles and apparel producers now have internationally integrated operations. While low-skill manufacturing tasks are put offshore, there is an expansion of design, management and logistics tasks in-state. In my research of international trading patterns, it is evident that US textile producers (of which North Carolina was about 40 percent) had developed significant

¹⁴ These data are drawn from Conway, P.: "Global Implications for Unraveling Textiles and Apparel Quotas", processed, 2006.

¹⁵ Source: author's calculation from US International Trade Commission database.

¹⁶ Source: US Department of Commerce.

supply-chain relationships with suppliers in Mexico and Central American countries.¹⁷ The creation of the trade agreement CAFTA+DR is designed to solidify and strengthen those relationships, and if successful North Carolina firms will remain competitive in producing textiles for the world market.

Regional impacts of structural adjustment.

While it is possible to disagree on the causes of downsizing in non-durables production in North Carolina, the regional effects of this downsizing are striking. I analyze this through use of information from the Davison's Textile Blue Book from various years over the last three decades.¹⁸ As Table 2 indicates, the number of plants in operation in North Carolina dropped by 18 percent (from 1271 to 1042) over that quarter-century.¹⁹ Those totals fail to illustrate, however, the tremendous turnover in business establishments. Between 1975 and 1980, for example, 371 operations went out of business while 199 operations opened.²⁰

Table 2: Firm Entry and Exit -- North Carolina Textile Sector

	1975	1980	1985	1990	1995	2000
Textile Operations	1271	1100	1027	1221	1157	1042
Operations exiting	371	268	224	329	416	
Operations entering	199	195	418	265	301	
Net entry	-172	-73	+194	-64	-115	
Percent exiting		29	24	22	27	36
Percent entering		16	18	40	22	26

¹⁷ Conway, P. and M. Fugazza: "Global Fabric: International Trade in Textiles and Apparel", processed, 2007.

¹⁸ Davison's Textile Blue Book has been published since 1866 by Davison Publishing Company of Concord, NC. It provides a listing of textile mills, dyers and finishers by state in the United States, Canada and Mexico, including information on employment, equipment, and type of product manufactured. We have collected the data for North Carolina firms from the 1975, 1980, 1985, 1990, 1995 and 2000 editions of this Blue Book.

¹⁹ The Blue Book was primarily an advertising book, and thus the reporting in the book was voluntary. To check coverage, I compared the number of plants reported in this book with the number of plants reported by the North Carolina Employment Security Commission for the same years. The aggregate number is greater than 90 percent of the official statistics in all periods. The correlation of number of reported plants by county over these years for Davison's and official statistics was 0.93. I conclude that the Davison's reports provide a reasonable picture of the North Carolina textile industry.

²⁰ The term "operation" refers to the same corporation operating a facility in the same physical location in both years. The number of new firms will be less than the number of new operations, since existing corporations can buy the facilities of failing competitors and re-open those facilities. If a corporation "reincorporates" under a new name, or moves its operations to a different address, it is treated as a new corporation in these figures.

Source: Davison's Textile Blue Books for 1975, 1980, 1985, 1990, 1995, 2000.

In each five-year period, the percent of operations closing down or under new management was between 20 and 30 percent. The percent of new operations was much more volatile, running from 16 to 40 percent of existing operations. Much of this "churning" was due to firms selling off low-performing plants to competing firms: the turnover then is visible only in examining the ownership at the plant level. However, net exit must involve the shuttering of plants, while net entry represents the bringing online of capacity unused in the previous period. Only 29 percent of the 1975 operations were still active under the same management in 2000.

In a statistical analysis of these data, I uncover three characteristics associated with a greater probability of exit.²¹ The same factors are negatively associated with the probability that a new plant will open.

Other things equal, plants are more likely to close down (or less likely to be established) if they are located in a county

- That is a greater percentage rural.
- That has a relatively lower percentage of residents with a high-school degree.
- That has a lower income per capita.

This has profound implications for the make-up of the North Carolina economy and the location of its citizens. North Carolina has historically been the home to "rural manufacturing" – small production plants in small towns scattered throughout the state. The state's adjustment to manufacturing downsizing will begin in these rural areas as the small production plants shut down. These are also localities with a large share of poorer and less educated residents. New plants are less likely to come to these localities. Residents face a difficult choice – remain in their homes with limited prospects for new employment, or travel long distances to find a new job.

I convened a conference in 2004 here in Chapel Hill to discuss the issues of community adjustment to closure of textile plants. As case studies we considered both the experience of Spindale from Rutherford County and Kannapolis of Cabarrus County.²² The former was a rural setting and the latter an urban setting, but it was striking in both cases to see the low levels of schooling and training achieved by the workers. Once the plants were closed, the workers laid off had few other employment options.

²¹ Conway, P.: "When do Firms Downsize?", processed, 2004.

²² Community-Based Adjustment to Textile Plant Closure and Downsizing, 8-9 April 2004, Chapel Hill. Papers and discussant reports available at <http://www.unc.edu/depts/Econ/PlantClosure>.

Should we attribute this to China?

This is a much longer discussion than I have space for here, but I will be happy to discuss this with the Commission. There are, in my opinion, three important questions to address. None suggests to me that China should be singled out for criticism, and only the last is basis for negotiations between the two countries.

1. What is the implication of the US current account deficit?
2. Isn't China's market penetration in the US too large to accept?
3. What about China's exchange-rate policy?

I disagree with the thrust of the consultant's report in regards to these three questions, and will be happy to discuss my disagreements during our question period.